Source Water Assessment Program (SWAP) Report For St. Vincent DePaul Camp

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
May 2004

Table 1: Public Water System (PWS) Information

PWS NAME	St. Vincent DePaul Camp
PWS Address	573 Adamsville Road
City/Town	Westport, Massachusetts
PWS ID Number	4334059
Local Contact	Paul Michael
Phone Number	508 697-8511

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #2	4334059-02G	200	1000	High
Well #3	4334059-03G	200	1000	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas
5. Appendix

1. Description of the Water System

St. Vincent DePaul Camp is a public water supply that employs two (2) wells to serve the schools 52 students and staff. Well #2 and #3 are 6-inch bedrock wells drilled to a depth of 500 and 320 feet, respectively. The wells were approved by the Department in a letter dated February 11, 1994. Based on the current Zone I of 200 feet and the Interim Wellhead Protection Area (IWPA) of 1000 feet, the average daily withdrawal for the well is limited to 27,000 gallons per day. Please refer to the attached map of Zone I and IWPA. Well #2 and Well #3 are located in a bedrock aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminate migration. A diesel-powered generator provides emergency power.

For current information on monitoring results and treatment, please contact the Public

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

Water System contact person listed above in Table 1.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is,**
2. **Storage, Use and Handling of Hazardous Material/Oil,**
3. **Aboveground Storage Tanks (AST) in IWPA,**
4. **Presence of Oil Contamination Site within the IWPA.**

The overall ranking of susceptibility to contamination for the wells is High, based on the presence of at least one High threat land use or activity in the Zone Is, as seen in Table 2.

1. **Zone Is –** Currently, the wells meet DEP's restrictions, which only allow water supply related activities in Zone Is. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems. Examples of modification or expansion include the addition of buildings, temporary or permanent, and increased water use due to an increase of staff and students.

   Recommendations:

   - Prohibit public access to the well and pump house by locking facilities, gating roads, and posting signs.
   - Conduct regular inspections of the Zone Is. Look for illegal dumping, and evidence of vandalism, check any aboveground storage tanks for leaks, etc.
   - The use or storage of pesticides, fertilizers or road salt within the Zone Is is prohibited.

2. **Aboveground Storage Tank -** In the basement of the hospitality center are two (2) 275 gallon steel AST containing heating fuel approximately 600 feet south of Well #2 and Well #3. In the basement of the day camp building there are two (2) 150-gallon AST's approximately 520 feet west of Well #2 and Well #3. In the basement of Dorm #1 there are two (2) 275 gallon AST, approximately 200 feet south of Well #2 and #3. If managed improperly, ASTs can be potential sources of contamination due to leaks or spills of the chemicals they store. There are sumps located in the basement of Dorm #1 and the day camp building to prevent flooding.

   Recommendation:

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Hazardous Material/Waste Oil Storage, Handling and Use	No	Well #2, #3	High	Cellar of dorm #1, equipment building, woodworking shop
Aboveground Storage Tanks	No	Well #2, #3	Moderate	Heating oil AST in IWPA
Athletic Fields	No	Well #2, #3	Moderate	Fertilizer and pesticide use
Parking lot, driveways & roads	No	Well #3	Moderate	Limit road salt usage and provide drainage away from wells
Residential	No	Well #2, #3	Low	Septic systems, fuel storage, landscaping
Septic System	No	Well #2, #3	Low	Refer to attachments
Oil or Hazardous Material sites	No	Well #2, #3	-	Refer to Appendix 1

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

- Consult with the local fire department for specific code requirements regarding your AST. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements.
- The Department recommends that you inspect, maintain and replace or upgrade components of your heating system regularly. Inspect oil lines (i.e. furnace to tank) for corrosion or pitting and replace copper lines with lines encased in a protective sleeve or install UL listed oil safety valve to prevent leaks.
- Remove hazardous materials from rooms with floor drains that drain to the ground or septic systems.

Recommendation implemented

Since the SWAP assessment visit, the school has provided 110 percent secondary containment for all aboveground storage tanks. St. Vincent DePaul received a Wellhead Protection Grant in 2000 from the Department of Environmental Protection to provide secondary containment for the two aboveground storage tanks in Dorm #1.

3. **Storage, Use and Handling of Oil/Hazardous Materials** - Cleaning supplies are stored in the cellar of Dorm #1 on the East side of the school complex within the IWPA. The equipment building contained cleaning supplies, flammable closet, gasoline, lawn mower and a floor drain. The wood workshop contained paints, cleaners, petroleum products etc.. The oil/hazardous material storage poses a potential threat to the well due to its proximity and potential for accidental release.

Recommendation:

- Remove hazardous materials from rooms with floor drains or sump pumps that drain to the ground or septic systems. Provide containment and exercise caution when using and storing these products.
- Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, and certified operator. Post labels as appropriate on raw materials and hazardous waste.
- Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, refer to http://www.state.ma.us/dep/bwp/dhm/files/sqgsum.pdf for the Requirements for Small Quantity Generators.

4. **Presence of Oil Contamination Site within the IWPA** - The IWPA for Well #2 and Well #3 contains DEP Tier Classified Oil and/or Hazardous Material Release Site indicated on the map as Release Tracking Number 4-014409. Refer to the attached map and Appendix for more information.

Recommendation:

- Monitor progress on any ongoing remedial action conducted for the known oil and/or Hazardous Material Release Site.

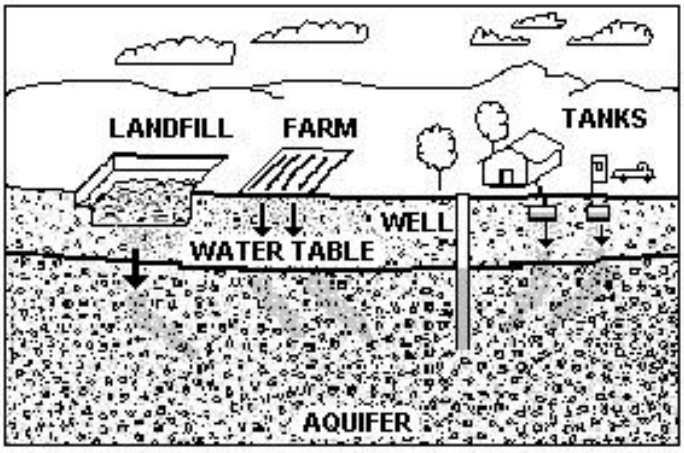

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Other activities noted during the assessment

There are athletic fields located within the IWPA of Well #2 and #3. Over-application of pesticides and fertilizers on athletic fields is a potential source of contaminants to the water supply. Use BMPs for applying, handling and storing of pesticides and fertilizers. Refer to attachments, "Protecting Water Sources from Fertilizer" and, "Protecting Groundwater from Pesticides".

The septic system's leaching field for the St. Vincent DePaul

For More Information:

Contact Isabel Collins in DEP's Lakeville Office at (508) 946 - 2726 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, and the local media.

Camp is located approximately 600 feet southwest of Well #2 and #3. The Board of Health approved the septic system plans on June 29, 1994. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply. Staff should be instructed on the proper disposal of spent household chemicals (include custodial staff, groundskeepers, and certified operator). Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Drinking water signs were posted at the time of the SWAP assessment visit. St. Vincent DePaul Camp should review and adopt the **key recommendations above** and the following:

Zone I:

- Keep non-water supply activities out of the Zone I.

Training and Education:

- Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
- Work with your community to ensure that stormwater runoff from local roads is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- Eliminate non-sanitary wastewater discharges to on-site septic systems. Instead, in areas using hazardous materials, discharge drains to a tight tank or sanitary sewer.
- For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- Work with local officials in Westport to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- Have a plan to address short-term water shortages and long -term water demands. Keep the phone number of a bottled water company readily available.
- Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide and Fertilizer Use Fact sheets
- Industrial Floor Drains Brochure
- Healthy Schools Fact Sheets
- Heating Oil Delivery Lines, A Homeowner's Guide to Preventing Leaks
- Wellhead Protection Grant Program Fact Sheet

5. Appendix

APPENDIX 1 – Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
4-014409	500 Adamsville Road	Westport	Oil

For more location information, please see the attached map. The map lists the release sites by RTN.